

REMARKS

Reconsideration of the application in light of the amendments and the following remarks
is respectfully requested.

Applicant respectfully notes that an Information Disclosure Statement, accompanied by PTO Form 1449, was filed concurrently with the application on January 4, 2002. A photocopy of the certificate of mailing and a return postcard stamped by OIPE are included in **Attachment A**. A photocopy of the IDS and Form 1449 are include in **Attachment B**. Applicant requests that the Examiner review the cited references, and initial Form 1449 so that the references are made of record and identified on the face of any patent which may issue from this application.

Status of the Claims

Claims 1-7 are pending. Claims 1 and 6 have been amended. No new matter has been added.

Applicant notes that the Office Action Summary mailed May 21, 2004 states that claims 1-6 are pending and rejected in the present application. However, a Preliminary Amendment filed concurrently with the application amended claims 1-6 and added claim 7. Applicant's attorney, Richard J. Katz, communicated with the Examiner via telephone regarding the Preliminary Amendment on June 2, 2004. Subsequent to the June 2nd telephone communication, Applicant forwarded to the Examiner, by facsimile, a photocopy of the Preliminary Amendment and a photocopy of a return postcard stamped by OIPE acknowledging receipt of the Preliminary Amendment. Applicant appreciatively acknowledges the effort and courtesies extended by the Examiner to their attorney.

Attachment C contains photocopies of the Preliminary Amendment and mark-up as filed on January 4, 2002; the facsimile cover page of June 2, 2004 and the USPTO auto-reply acknowledgement. The submission of the Preliminary Amendment is clearly indicated on the express mail certificate and OIPE stamped return postcard, *see* Attachment A. Additionally, in the May 21, 2004 Office Action the Examiner states the language of amended claim 4, as amended by the Preliminary Amendment, when stating the basis of rejection. (*See* Detailed Action, page 5, second paragraph.) During the June 2nd telephone interview the Examiner acknowledged having possession of claim 4 as presented in the Preliminary Amendment. Clearly, the Preliminary Amendment was before the Examiner when the application was examined. The foregoing discussion demonstrates that claim 7 is properly in the case, and was properly in the case at the time of the Examiner's action, as were the references cited in the IDS.

Claim 7 is entitled to a first examination of the merits. Pursuant to 37 C.F.R. § 1.104(b) "[t]he [E]xaminer's action will be complete as to all matters" Because claim 7 did not receive examination although it was actually in the application at the time of the Examiner's action, and owing to the Examiner's failure to consider the references cited in the IDS, Applicant requests that the Examiner withdraw the May 21st Office Action for being incomplete in accordance with Rule 1.104(b). After the Office Action is withdrawn, Applicant requests the Examiner treat the present amendments as a Supplemental Preliminary Amendment which was "received in the Office (§ 1.6) on or before the mail date of the first Office action under § 1.104." (37 C.F.R. § 1.15(a).)

Status of the Specification

The Examiner has objected to the Specification for not following guidelines for a preferred layout of a utility application by lacking section headings. This objection has been addressed by appropriate amendment of the Specification. No new matter has been added. Applicants request withdrawal of this objection.

Rejection Under 35 U.S.C. § 103

Claims 1-4 and 6 stand rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 5,355,526 to Higgins in view of U.S. Patent No. 5,969,681 to O'Neill. Because the Examiner's action is not "complete as to all matters" as required under Rule 1.104(b), as discussed above, Applicant requests that the Office Action be withdrawn. Nevertheless, a complete response is presented with respect to the present claims, because it is expected that the Examiner will consider them in the new first Office Action.

The Examiner contends that Higgins discloses a communication apparatus and a structure of a radio frequency front end which includes most of the features of independent claims 1 and 6. The Examiner acknowledges that Higgins does not disclose that the distance between the second circuit board and the antenna circuit board is substantially smaller than a quarter of a wavelength at an operation frequency of the front end. However, the Examiner cites O'Neill as disclosing this feature, and states that it would have been obvious at the time of the invention to combine Higgins and O'Neill to achieve the inventions of claims 1-4 and 6. The Examiner has not met the required burden to establish a *prima facie* case of obviousness.

In considering obviousness, the critical inquiry is whether something in the prior art as a whole suggests the desirability, and thus the obviousness, of making a combination. *In re Newell*, 891 F.2d 899, 901-02, 13 U.S.P.Q. 2d 1248, 1250 (Fed. Cir. 1992). The Examiner must show some objective teaching from the art that would lead an individual to combine the references, *i.e.*, there must be motivation. In particular, “[t]he mere fact that the prior art may be modified in the manner suggested by the examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” (emphasis added). *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q. 2d 1780, 1783 (Fed. Cir. 1992). The Court of Appeals for the Federal Circuit has stated: “selective hindsight is no more applicable to the design of experiments than it is to the combination of prior art teachings. There must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the Applicant's disclosure” *In re Dow Chemical Co.*, 5 U.S.P.Q. 2d 1529, 1531 (Fed. Cir. 1988) (citations omitted).

As is demonstrated below, there is no suggestion in Higgins or O'Neill to combine these references. Instead, the Examiner has impermissibly relied on the disclosure of the present application “to reconstruct the patentee's claimed invention from prior art by using the patentee's claim as a ‘blueprint’ when prior art references require selective combination to render obvious a subsequent invention.” (*Dow Chemical Co.*, 5 U.S.P.Q. 2d at 1532, *citing Interconnect Planning Corporation v. Feil*, 774 F.2d 1132, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985).)

Higgins discloses a receiver/transmitter structure 300 where a “[c]onductive resonator means 308 has a first terminal 322 which is coupled to the radio antenna (not shown)

and a second terminal 324 which attaches to the antenna port of antenna switch 208 which is part of integrated section (IC) 202.” (Higgins, column 5, lines 41-46 and Figure 3.) Higgins discloses that “[b]oth stripline substrates 304 and 306 have ground planes 302 in [sic] their outer or first surfaces 314 and 316.” (Higgins, column 5, lines 30-31 and Figure 3.) Higgins discloses a receiver/transmitter structure that has ground planes on its outer surfaces and is connected via an antenna port to an antenna that is not part of the receiver/transmitter structure itself.

Amended claim 1 recites “an antenna circuit board on a first surface of which there is at least one radiating element and on a second surface of which there is a conductive plane.” Independent amended claim 6 recites similar features. Both claims 1 and 6 require that a radiating element be on a first surface of an antenna circuit board, which has a second surface that is conductive. In contrast, Higgins merely discloses a ceramic transmission line structure 300 that includes stripline sections 304, 306 with ground planes on their respective outer surfaces, and that structure 300 also includes terminal 322, where an external antenna could be attached. Higgins does not disclose radiating elements on a surface of the stripline sections; nor that an antenna may be part of the receiver/transmitter structure 300.

Thus, Higgins does not disclose or suggest an antenna circuit board where “on a first surface of which there is at least one radiating element” as recited in claim 1. Nor does Higgins disclose or suggest “an antenna circuit board on a first surface of which there are radiating elements of an antenna” as recited in claim 6. The stripline sections 304 and 306 have conductive runners 308 on their respective inner surfaces 318, 320, but these conductive runners do not constitute a ground plane and, again, Higgins does not disclose or suggest any radiating elements on either surfaces of the stripline sections 304, 306.

Higgins discloses that “self contained receiver/transmitter structure 300” (which is exclusive of an antenna) is formed by placing the inner surface 318 of stripline section 304 against the inner surface 320 of stripline section 306. (Higgins, column 5, line 19 and Figure 3.) Thus, ground plane 302 on each stripline section 306, 308 is on the outside of the receiver/transmitter structure 300. Application claims 1 and 6 each recite “a protective frame such that the antenna circuit board second surface, the second circuit board first surface and the protective frame form a substantially closed space.” As recited in the claims 1 and 6 the antenna circuit board second surface is a conductive plane, and is within the closed space. In contrast, Higgins discloses that ground plane 302 is on the outside of the receiver/transmitter structure 300. Also, by placing the stripline sections together Higgins discloses forming a solid block, but for the “groove walls 324 which form the conductive runners 308.” (Higgins, column 5, lines 38-39.) Thus, Higgins does not disclose or suggest “a substantially closed space” as recited in claims 1 and 6.

O’Neill discloses a microstrip patch antenna comprising a thin dielectric substrate 26 positioned between a lower conductor 24 and an upper conductor 22. (O’Neill, Figures 2(a)-(b), and column 5, line 62 through column 6, line 10.) O’Neill discloses a conventional microstrip antenna and does not disclose or suggest placing the microstrip antenna on the receiver/transmitter structure as recited in claims 1 and 6. Neither Higgins nor O’Neill discloses or suggests mounting an antenna on the receiver/transmitter structure. Thus, there is no motivation to combine Higgins and O’Neill.

O’Neill does not disclose or suggest the features of claims 1 and 6 which Applicant has shown are not disclosed or suggested by Higgins, as discussed above. Therefore,

the combination of Higgins and O'Neill does not result in, disclose, nor suggest, the inventions of claims 1 and 6, but rather results in the integrated radio receiver/transmitter structure of Higgins coupled to a separate microstrip patch antenna as disclosed in O'Neill attached at terminal 322 of the Higgins' structure.

For the foregoing reasons, Applicant submits that the Examiner has not met the burden of establishing a *prima facie* case of obviousness over claims 1 and 6. Claims 2-4 and 7 depend from claim 1 and Applicant submits that claims 2-4 and 7 are patentable over the combination of Higgins and O'Neill for at least the same reasons as claim 1. Withdrawal and reconsideration of the rejection is requested.

Claim 5 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Higgins and O'Neill in view of U.S. Patent No. 4,143,369 to Ayers.

The Examiner acknowledges that the combination of Higgins and O'Neill fails to disclose an "antenna being a multi-frequency antenna having at least two radiating elements on the antenna circuit board." The Examiner cites Ayers as disclosing a multi-frequency antenna having at least two radiating elements on the antenna circuit board. The Examiner states that it would have been obvious at the time of the invention to combine Higgins, O'Neill and Ayers to achieve the invention of claim 5.

Ayers discloses an IFF system with two antennas 25, 26 that are usually "mounted at substantially opposite locations on the vehicle (aircraft) 21." (Ayers, column 5, lines 41-42 and Figure 1.) Ayers also discloses that a third antenna 26a can be added in a different location. (Ayers, column 8, lines 7-10.) Because Ayers discloses multiple antennas

Additionally, Ayers does not disclose nor suggest the features of claim 1 missing from the combination of Higgins and O'Neill, as discussed above. Therefore, the combination of Higgins, O'Neill and Ayers neither discloses nor suggests, singly or in combination, the invention of claim 5. Thus, the Examiner has failed to met the burden of establishing a *prima facie* case of obviousness over claim 5. Withdrawal and reconsideration is requested.

Each and every point raised in the Office Action dated May 21, 2004 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-7 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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ATTACHMENTS: A, B and C